STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: **The Basin CC & Thin** *Agreement #:* **30-076531**

2. Name of applicant: **Washington State Department of Natural Resources**

3. Address and phone number of applicant and contact person:

   Washington State Department of Natural Resources
   Pacific Cascade Region
   Bud Clark
   PO Box 280 Castle Rock, WA 98611
   360.577.2025

4. Date checklist prepared: **04/23/2004**

5. Agency requesting checklist: **Washington State Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:* **02/24/2005**
   b. *Planned contract end date (but may be extended):* **12/31/2007**
   c. *Phasing:* **Final harvest will occur in the future in Units #1, #3, and #4.**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Timber Sale

   a. *Site preparation:*
   Landings and slash piles may be burned, as needed, to provide plantable spots to ensure adequate regeneration.

   b. *Regeneration Method:*
   Unit #2 will be planted to meet Forest Practices rules or better.

   c. *Vegetation Management:*
   Competing vegetation may be treated, as needed, in accordance with the Final Forest Resource Plan (July 1992), Forest Practices rules, and the Final Habitat Conservation Plan (1997) in Unit #2.

   d. *Thinning:*
   Pre-commercial thinning may occur at approximate age 15 to manage stand stocking levels, in accordance with the Final Forest Resource Plan (July 1992), Forest Practices rules, and the Final Habitat Conservation Plan (1997) in Unit #2.

Roads:
Roads remaining at the termination of the sale will be used for future management activities as necessary. Road maintenance and periodic ditch and culvert cleanout will occur as necessary.

Rock Pits and/or Sale:
The existing P&E Extension Quarry (Sec. 29, Township 13 North, Range 06 West, W.M.) will be the designated rock source for this proposed sale, for future road construction, reconstruction, and maintenance as needed for management of DNR lands. Further expansion of this pit is not currently planned.

Other:
Firewood permits for the sale area may be made available to the public if, after harvest, downed wood is plentiful near roadsides.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☒*303 (d) – listed water body in WAU:* ☒*temp* ☐*sediment* ☐*completed TMDL (total maximum daily load):* **Willapa River**
☐*Landscape plan:*
☒*Watershed analysis:* **Willapa Headwaters WAU, available at Pacific Cascade Region Office.**
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan:* **Available at Pacific Cascade Region Office.**
☒*Wildlife report:* **Available at Pacific Cascade Region Office.**
☐*Geotechnical report:*
☐*Other specialist report(s):*
☒*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):* **Spotted Owl Memorandum of Understanding between Dept. of Natural Resources and Dept. of Fish and Wildlife dated 12/09/2002, available at Pacific Cascade Region Office.**
☒*Rock pit plan:* **Available at Pacific Cascade Region Office.**
☒*Other:* **Information was gathered from the State Soil Survey, Washington Department of Natural Resources' Forest Resource Plan (July 1992), GIS maps that display water types, rain on snow areas, and areas of potential mass wasting and erosion; WA Department of Natural Resources Marbled Murrelet Habitat Reclassification maps; WA Department of Natural Resources HCP; Planning and Tracking reports; and ESA listed Salmonid species map produced by Forest Practices. All are available at Pacific Cascade Region Office.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒*HPA* **log #ST-D9199-04** ☒*Burning permit* ☐*Shoreline permit* ☒*Incidental take permit* **1168 and PRT-812521**
☒*FPA #* _____ ☐*Other:*

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

The Basin CC & Thin is a four-unit sale based upon thinning prescriptions in three units and a regeneration harvest in one unit. The units are located centrally in the Washington Department of Natural Resources P&E forest managment block in Pacific County. The total sale area is 483 acres, with an estimated 967 MBF in U-1, 2,727 MBF in U-2, 1,387 MBF in U-3 and 1,811 MBF in U-4.

Originally some 556 acres of homogenous timber were considered for thinning. Field reconnaissance revealed six type 3 streams, four type 4 streams, and thirty-six type 5 streams within and adjacent to the proposal area. The six type 3 streams are bounded out of the unit by average 200-foot-wide RMZs, the four type 4 streams are bounded out by minimum 100-foot-wide RMZs. The RMZs total 70 acres, reducing the proposed unit size to approximately 486 acres. One research plot was located within the proposed sale area, approximately 3 acres in size. The research plot is active so its approximate 3 acres were bounded out with timber sale tags reducing the proposed sale size to 483 acres.

The proposed sale is entirely within the Upper Mill Creek owl circle, site # 877 (Status 1). Habitat within the sale is typed as "Forest Cover" and "Good" Northern spotted owl habitat according to the December 9, 2002 Memo of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife. Habitat within the sale typed as "Good", Units #1, #3 and #4, will be thinned to a relative density ranging from 40 to 50. The assessment of Unit #2 indicated a regeneration harvest as the appropriate prescription, and it is typed as "Forest Cover," so a regeneration harvest is permitted.

A total of 1,003 leave trees (average of approximately 11.3 trees per acre), representing approximately 4.6 acres, will be clumped and scattered within Unit #2 to retain unique wildlife habitat characteristics.

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Pre-Harvest Stand Description:
Unit #1, 154 acres, is an approximately 45-year-old stand of Douglas-fir and red alder with some older trees intermixed. The understory consists of vine maple. The forest floor is almost exclusively dominated by sword fern in the uplands, and by salmonberry and vine maple toward the RMZs. The timber in this unit is typed as both "Forest Cover" and "Good" Northern spotted owl habitat according to the December 9, 2002 Memo of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife.

Unit #2, 89 acres, is an approximately 45-years-old stand of Douglas-fir and red alder. The understory consists of vine maple. The forest floor is almost exclusively dominated by sword fern in the uplands, and by salmonberry and vine maple toward the RMZs. The timber in this unit is typed as "Forest Cover" according to the December 9, 2002 Memo

of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife.

Unit #3, 95 acres, is an approximately 45-years-old stand of Douglas-fir and red alder with some older trees intermixed. The understory consists of vine maple. The forest floor is almost exclusively dominated by sword fern in the uplands, and by salmonberry and vine maple toward the RMZs. The timber in this unit is typed as both "Forest Cover" and "Good" Northern spotted owl habitat according to the December 9, 2002 Memo of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife.

Unit #4, 145 acres, is an approximately 45-years-old stand of Douglas-fir and red alder with some older trees intermixed. The understory consists of vine maple. The forest floor is almost exclusively dominated by sword fern in the uplands, and by salmonberry and vine maple toward the RMZs. The timber in this unit is typed exclusively as "Good" Northern spotted owl habitat according to the December 9, 2002 Memo of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife.

Type of Harvest:
Unit #1; a commercial thinning will be implemented using cable and shovel logging techniques. The stand will be thinned to a relative density of 40, leaving approximately 130 trees per acre. Leave trees shall be the best 130 trees per acre throughout uniform conifer stands within the unit. By cutting all hardwood clumps and leaving numerous RMZs within the unit, skips and gaps will become characteristics in the resulting stand. Skips, simply put, are areas of timber untouched by the thinning prescription implemented throughout the rest of the unit. Gaps are areas usually small in size that are cleared of timber. These techniques aid in promoting the development of understory vegetation and multiple canopy layers to encourage rapid development of vertical and horizontal stand diversity.

Unit #2; a regeneration harvest strategy will be implemented using cable and shovel logging techniques. Unit #2 is located at the east end of the Halfmoon basin, where wind is funneled to and leaves the basin. This, coupled with a high height to diameter ratio in this part of the stand, would result in a high risk of windthrow in the upper reaches of the unit if a thinning prescription was implemented. This sale is a portion of a stand that encompasses approximately 1,200 acres of contiguous timber. A regeneration harvest of 89 acres now will also begin to diversify the age-classes in this area. An average of approximately 11.3 trees per acre (1003 total) will be left as leave trees. Leave trees in the unit are located within pockets of larger Douglas-fir, and include other conifer and hardwood species. Leave tree clumps have been marked to help protect areas of instability outside the sale boundary. However, leave trees will be mostly scattered; mainly on the lower slopes.

Unit #3; a commercial thinning will be implemented using cable and shovel logging techniques. Unlike unit #1, this stand will be thinned to a relative density of 42, leaving approximately 110 trees per acre. Leave trees shall be the best 110 trees per acre. Like the regeneration harvest in Unit #2, varying the target RD between units will help diversify the 1,200 contiguous acres within the Halfmoon Basin. RMZs will serve as skips within the unit.

Unit #4; a commercial thinning will be implemented using cable and shovel logging techniques. The stand will be thinned to a relative density of 48, leaving approximately 140 trees per acre. Leave trees shall be the best 140 trees per acre. Again the target RD of Unit #4 differs from others within the sale to help diversification. Skips will be created within this unit by leaving an active research area intact as well as several lengthy RMZs that extend into the stand.

Overall Objectives: The overall objective for these forest management units is to manage for sustainable production of revenue for State trust beneficiaries. Future management of these units will be conducted with a broad landscape perspective in mind, including wildlife habitat, riparian functions, and aesthetic impacts. This will be accomplished while meeting and exceeding Forest Practices rules, Habitat Conservation Plan objectives, and Forest Resource Plan objectives.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		**8,739**	**10**	**0**
Reconstruction		**0**		**0**
Abandonment		**0**	**0**	**0**
Bridge Install/Replace	**0**			**0**
Culvert Install/Replace (fish)	**0**			**0**
Culvert Install/Replace (no fish)	**6**			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map. See also color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description:

Sections 19, 20, 28, 29, 30, 31, and 32, Township 13 North, Range 6 West, W.M.

b. istance and direction from nearest town (include road names):

The sale is approximately 2.7 miles southeast of Menlo, WA on State Route 6, then approximately 8.5 miles east of State Route 6 on the P&E Mainline.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")

WAU Name	WAU Acres	Proposal Acres
WILLAPA HEADWATERS	**62,909**	**468**
MILL CREEK	**15,086**	**15**

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

Unit #1 of this proposal is located in the Willapa Headwaters WAU and Mill Creek WAU, Unit #2 is located in the Willapa Headwaters WAU and Mill Creek WAU, Unit #3 and Unit #4 are located in the Willapa Headwaters WAU. Agriculture and home sites are located in the valleys near the major streams, with some home sites located in the uplands. There appears to be a recent trend towards increasing conversion of agriculture and forestry lands to home sites in the low to mid elevations. The uplands are mainly managed for timber production. Ownership includes large industrial forests, small private forests, and DNR managed forests. Forested stands within these WAUs appear to be almost exclusively second and third growth stands. The number Forest Practices shown on the WAU maps (referenced above on the DNR website) along with observations within these WAUs indicate that the timber stands are intensely managed. Management includes regeneration harvests, thinnings, and partial cuts.

The following table is an estimated summary of past and future activity on DNR-managed land and privately-managed land in the WAU (information is based off of Forest Practices applications that have been approved in the last seven years compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within the WAU. The source of this information only provided the acreage on the WAU level. Approximately 64% of the land managed by the DNR in the Mill Creek WAU is covered with vegetation greater than 25-years-old.

Mill Creek WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	PROPOSED EVEN-AGED HARVEST IN THE FUTURE	PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE
DNR MANAGED LAND	10,495	737	3	279	0
PRIVATE OWNERSHIP	4,591	671	0	UNKNOWN	UNKNOWN
TOTAL	15,086	1408	3	279	0

Approximately 64% of the land managed by the DNR in the Willapa Headwaters WAU is covered with vegetation greater than 25-years-old.

Willapa Headwaters WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	PROPOSED EVEN-AGED HARVEST IN THE FUTURE	PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE
DNR MANAGED LAND	19,104	1,026	23	355	0
PRIVATE OWNERSHIP	43,805	8,828	2,340	UNKNOWN	UNKNOWN
TOTAL	62,909	9,854	2,363	355	0

Stands selected for harvest on DNR managed lands in these WAUs meet the financial requirements (timber type, stand age, trust, etc.) and the ecological requirements (HCP, Forest Practices rules, Forest Resource Plan green-up policies, etc.) of the Department. Additional stands may be selected for regeneration, thinning, and partial cut harvests in the future as they meet the Department's financial and ecological policies and mandates.

This proposal is entirely within the Upper Mill Creek owl circle, site # 877 (Status 1). Habitat within the harvest units is typed as "Forest Cover" and "Good" Northern spotted owl habitat according to the December 9, 2002 Memo of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife. Habitat within Unit #2 is typed solely as "Forest Cover", and therefore, a regeneration harvest is permitted. Units #1, #3 and #4 contain "Good" Northern spotted owl habitat, so a thinning prescription will be implemented in these units.

In 1994, an analysis of the Willapa Headwaters watershed was completed to assess the current condition of the watershed and write prescriptions to provide additional protection of public resources as appropriate. This watershed analysis was initiated by Weyerhaeuser Company, and included representatives from Weyerhaeuser, DNR, Rayonier Timberlands, Dept. of Ecology, Dept. of Fish and Wildlife, Campbell Group/John Hancock, and observers from the Pacific County Farm Forestry Association and Washington Environmental Council. The assessments included mass wasting, surface erosion, hydrology, riparian, fish, and water supply/public works. Results of this watershed analysis found that Units #1, #2, #3 and #4 of this proposal are in an area of low mass wasting potential and low soil erosion potential. Units #1 and #2 have small sections in the Mill Creek WAU. Since the analysis was written, DNR has entered into an HCP. The riparian, unstable slopes, and roads procedures within the HCP meet and/or exceed the prescriptions called for in the Willapa Headwaters Watershed Analysis to address mass wasting and surface erosion. Field verification indicates there is no harvest activity or road construction on unstable slopes with this proposal.

The DNR has an HCP agreement with the federal government concerning threatened and endangered species and their habitats, which requires the Department to manage landscapes in a conservative manner. This agreement substantially helps the Department to mitigate for harmful cumulative effects related to its management activities. The HCP is designed to protect and promote fish and wildlife species and their habitats over a broad regional area. The applicable HCP strategies incorporated into this proposal are as follows:

- **Designating RMZs averaging 200 feet wide along six type 3 streams and a minimum of 100 feet wide along four type 4 streams;**
- **Retaining 11 leave trees per acre scattered and clumped throughout Unit #2;**
- **Deferring harvest of re-classified marbled murrelet habitat until a final marbled murrelet strategy is developed;**
- **Deferring harvest of "best available" spotted owl habitat in Upper Mill Creek circle;**
- **Enhancing habitat in "good" spotted owl habitat in Upper Mill Creek Circle through a thinning prescription;**

- **Assessing harvest area for potentially unstable slopes; and**
- **Analyzing, designing, constructing, and maintaining a road system to minimize effects on the environment.**

Retaining RMZs helps to maintain water quality, stream bank integrity, and stream temperature. They also provide LWD recruitment and habitat for riparian obligate species. Furthermore, the RMZs will develop older forest characteristics that will help support older-forest dependant wildlife populations. The strategy of retaining at least 8 leave trees per acre in Unit #2 provides legacy elements for recruitment of future snags, coarse woody debris, multi-layered stands, and large diameter trees in the upland areas. In combination, these features will provide elements of older forest habitat characteristics within the third growth stand for wildlife species dependent on older forest habitat. Finally, road system analysis and design required under the Forest Practices RMAP process will improve roads and minimize road impacts on the environment. The road plan analysis required under the Forest Practice RMAP process in the P&E Block (which encompasses all of the DNR managed lands in the Willapa Headwaters WAU and Mill Creek WAU) is in the process of being completed. Haul routes for this proposal have been evaluated for potential impact to the environment. To assure sediment delivery is controlled during active hauling, multiple cross drains, sediment ponds, and other structures may be used to disconnect ditch water from flowing streams. Road ditch water will be routed to the forest floor for filtering prior to entering flowing watercourses, and new road construction will be located on or near stable ridge top locations.

In addition to mitigation efforts incorporated into this proposal under the HCP and Forest Practices RMAP process, the DNR will include contract language in this proposal to meet legal requirements of Forest Practices and Department of Ecology regarding sediment delivery to streams. This language addresses timing of operations, restrictions on impacts to soils (compaction/rutting), and requirements for sediment control devices and techniques.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

The Willapa Headwaters WAU is generally rolling at the lower elevations with deepening "V"-shaped draws at the higher elevations. The slopes range from 0 to 100% with approximately 6% of the WAU in unstable soils. The DNR manages 30% of the land in the WAU. The WAU is primarily rain dominated, receiving approximately 70-110 inches per year, and 12% of the WAU is in the rain-on-snow zone. Elevation ranges from 200 feet to 2,900 feet. This WAU is in the western hemlock zone, with major conifer timber types being western hemlock in the western portion and Douglas-fir in the eastern portion, and red alder being the major hardwood species. A Willapa Headwaters Watershed Analysis was completed in 1994.

The Mill Creek WAU is very similar. DNR manages 70% of the WAU, and slopes range from 10-80%. The Willapa River flows northwest into Willapa Bay. The Mill Creek WAU is located in the western hemlock forest vegetation zone.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

Approximately 69% of the proposed sale has slopes less than 35%, with the units ranging in elevation from 650 to 1,900 feet. The dominant tree species are Douglas-fir and red alder, with scattered western hemlock and western redcedar.

b. What is the steepest slope on the site (approximate percent slope)?

Approximately 78%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
3852	V.COBBLY LOAM	65-90	154	HIGH	HIGH
9803	SILT LOAM	8-30	103	LOW	MEDIUM
9804	SILT LOAM	30-65	68	MEDIUM	HIGH
7619	GRAVELLY SILT LOAM	5-30	55	INSIGNIFICANT	MEDIUM
1936	SILT LOAM	8-30	32	LOW	MEDIUM
3849	V.COBBLY LOAM	5-30	32	LOW	LOW
9805	SILT LOAM	65-90	17	HIGH	HIGH
4242	SILT LOAM	30-65	15	MEDIUM	MEDIUM
0663	SILT LOAM	8-30	6	INSIGNIFICANT	LOW
6146	VARIABLE VARIABLE	0-99	1	NO DATA	VARIABLE
0577	SILT LOAM	8-30	0	INSIGNIFICANT	MEDIUM
1937	SILT LOAM	30-65	0	MEDIUM	HIGH

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) Surface indications:

A few potentially unstable areas were observed immediately adjacent to streams adjacent to the sale (Unit #2). These areas lie within the RMZs and are tagged out of the sale. A small slide occurred in the stand to

the east of this sale several years ago, apparently originating from an oversteepened type 5 headwall area. Within the sale boundaries, although slopes are locally somewhat steep, no clear indicators of potentially unstable slopes were observed.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

Yes. There are indicators of shallow slope failures in several places in the WAU. These are generally associated with slopes greater than 65% found most commonly within the RMZs along the toe slopes of the main draws, within hollows that extend as far up as mid-slope, and/or within headwalls at the top of the steeper draws. No natural slope failures were observed within the sale boundaries.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
Associated management activity: **Sidecast road construction on steep sideslopes.**

Within the WAU, some shallow-rapid side cast failures associated with roads have occurred, mostly where roads were constructed prior to the Forest Practices Act and where roads are located mid-slope on steep slopes.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☐*No* ☒*Yes, describe similarities between the conditions and activities on these sites:*

Indicators of potentially unstable slopes were observed in RMZs adjacent to Unit #2 only. These are along the toe slopes of main draws and in oversteepened headwall areas. These areas lie within the RMZs and are tagged out of the sale.

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

Proposed road construction will be on ridge tops and stable sideslopes. Shovel logging will not be allowed on slopes over 30% unless authorized by the Contract Administrator. All cable settings will require lead end suspension. Potentially unstable areas lie within the RMZs adjacent to Unit #2 and are tagged out of the sale area. See B.1.h.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **4.4** *Approx. acreage new landings:* **0.7** *Fill source:* **None**

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Some erosion could occur as a result of this proposal. Following procedures outlined in the Road Plan, the amount and severity of the erosion should be kept to a minimum. The areas of exposed soil will be grass seeded after construction.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

Approximately 1% of the sale area will be on impervious surfaces (gravel roads).

h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

No road construction will be allowed between September 30 and May 1 without written authorization from the Contract Administrator. In order to reduce the potential for erosion and sediment delivery to streams, roads will be located on ridge tops and on stable side slopes, and designed to current standards as specified in the Road Plan. Following road construction, areas of exposed soil will be grass seeded. In order to reduce the potential for erosion or slope failure and sediment delivery to streams, drainage control measures will be designed and constructed to avoid concentration and diversion of runoff and discharge onto sensitive slopes, and to filter transported sediment. To reduce the potential of slope and landing failure, slash piles on landings above steep slopes will be pulled back to reduce the weight on the slope and ultimately burned. After harvest, seedlings will be planted or the stands will regenerate naturally. Though disturbed, native plants such as ferns, salal, huckleberry, and salmonberry will persist within the Douglas-fir/red alder timber type.

Shovel logging will not be allowed on slopes over 30% unless approved by the Contract Administrator and will not be permitted from September 30 to May 1 unless authorized by Contract Administrator. Lead-end suspension is required on all cable settings. Yarding may be suspended at the discretion of the Contract Administrator when soil rutting exceeds four inches as measured from the natural ground line when there is potential for damage to any public resource. If yarding is suspended, the Contract Administrator must be assured that future harvest operations will not potentially damage any public resource. To reduce potential damage to the earth, the Contract Administrator may require water bars to be constructed by hand and grass seed to be placed on exposed soils. Any and/or all operation(s) of this sale may be temporarily suspended when, in the opinion of the Contract Administrator, there is the possibility of sediment being delivered to any flowing water tributary to any fish-bearing stream. RMZs averaging 200 feet wide will be left adjacent to six type 3 streams and RMZs a minimum of 100 feet wide will be left adjacent to four type 4 streams. RMZs will reduce the potential for erosion of stream banks and stream-adjacent slopes, as well as reduce the potential for mass wasting events where potentially unstable slopes may be present. Equipment Limitation Zones, 30-foot-wide zones measured from the bank full width, will be utilized on the thirty-six type 5 streams to decrease the possibility of sediment delivery and loss of stream function.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling,* automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

No emissions are anticipated other than minor amounts of heavy equipment exhaust, road dust created by harvest hauling, and smoke created from burning landings, which will be done in accordance with the State's Smoke Management Program.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Slash pile burning will be done in the fall during the rainy season under the direction of the State's Smoke Management Program. A burn permit will be obtained before burning begins.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map and forest practice base maps.)*

a) Downstream water bodies:

Willapa River is located approximately 4 miles downstream from the proposed sale boundary.

Unit #1: Within Unit #1 six type 5 streams originate and flow southwest into Halfmoon Creek, then into the Willapa River. Four other type 5 streams flow into two type 3 streams which flow southwest into Halfmoon Creek, then into the Willapa River.

Unit #2: Four type 5, two type 4 and a type 3 stream originate within Unit #2 and flow southwest into Halfmoon Creek, then into the Willapa River.

Unit #3: Within Unit #3 seven type 5 streams originate and flow southwest into Halfmoon Creek, then into the Willapa River. Two type 5 streams flow into a type 4 which flows southwest into Halfmoon Creek, then into the Willapa River. Halfmoon Creek is a type 3 stream which flows east to west along the southeast border of Unit #3.

Unit #4: Within Unit #4 ten type 5 streams originate and flow northwest into Halfmoon Creek then into the Willapa River. Two type 5 streams flow into a type 4 which flows into a type 3 which flows northwest into Halfmoon Creek then into the Willapa River. Two other type 5 streams also flow into the type 3 that flows northwest into Halfmoon Creek, then into the Willapa River. Halfmoon Creek is a type 3 stream that flows east to west along the north border of Unit #4

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Stream	**3**	**6**	**200**
Stream	**4**	**4**	**100**
Stream	**5**	**36**	**0**

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

An average 200-foot wide RMZ has been designated adjacent to six type 3 streams. A minimum 100-foot wide RMZ has been designated along four type 4 streams. All thirty-six type 5 streams within the sale will be protected by an Equipment Limitation Zone to decrease possible loss of stream function and decrease possible sediment delivery due to operating equipment. An Equipment Limitation Zone is a 30-foot wide buffer measured horizontally from the bankfull width of a type 5 water. Less than 10% of the ground within the Equipment Limitation Zone may be disturbed by ground-based equipment or by partially suspended logs. Soil types in each unit have a low to moderate potential for windthrow. The Riparian Management Zones consist of large, wind-firm Douglas-fir and western redcedar surrounded by large older red alder and big-leaf maple and are protected from prevailing westerly winds by their low slope positions, adjacent timber, and/or east aspect; therefore, wind buffers will not be designated adjacent to Riparian Management Zones on six type 3 streams.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map.)*
Description (include culverts):

Tailhold cables may be strung across the six type 3 streams and four type 4 streams; however, no timber will be yarded through them. The thirty-six type 5 streams within the sale may have cables strung across them, or timber felled into and across them. When yarding occurs near the thirty-six type 5 streams, an Equipment Limitation Zone will be utilized to maintain stream function and stream bank integrity, and decrease possible sediment delivery. Timber harvest will occur at least 100 feet from four type 4 streams. Road construction may occur within 200 feet of two type 5 streams within Unit #3.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☒*No* ☐*Yes, description:*

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒*No* ☐*Yes, type and volume:*

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

Soil maps of the Willapa Headwaters WAU indicate that approximately 30% of the WAU contains soils with a high soil erosion potential and/or high mass wasting potential. Soil maps of the Mill Creek WAU indicate that approximately 39% of the WAU contains soils with a high soil erosion potential and/or high mass wasting potential. Eroded material enters the streams during moderate to high flows and can be observed as a noticeable increase in stream turbidity. The increased turbidity can be observed in streams originating in mature stands with no recent forest practice activity. The potential for eroded material to enter surface water based on this proposal is low due to the erosion control measures being included in the proposal (see B.1.h.).

8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
☐*No* ☒*Yes, describe changes and possible causes:*

There is evidence of surface erosion and mass wasting in various portions of the WAUs. Elevated streambeds attributed to accelerated aggradations of sediment in the channels are the main indicator of channel changes in the WAUs. There is also a general decrease in the amount of large woody debris (LWD) in streams that were not buffered during past harvest activities due to a decrease in recruitment of LWD and the natural decay process of LWD. Where the stream banks erode, the channels may change dimension and/or direction over time.

9) Could this proposal affect water quality based on the answers to the questions 1-8 above?
☐*No* ☒*Yes, explain:*

This proposal is expected to have minimal to no effect on water quality. RMZs averaging 200 feet wide along the six type 3 streams and a minimum of 100 feet wide along the four type 4 streams will help maintain stream bank integrity, provide shade, and recruit LWD. Equipment Limitation zones along the thirty-six type 5 streams and other items listed in B.1.h. above and B.3.d. below will minimize potential sediment delivery to streams. These mitigation elements should limit affects on water quality in relation to the items of concern revealed in questions 1-8 above.

10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒*No* ☐*Yes, describe:*

The Willapa Headwaters WAU averages 5.3 miles of road per square mile, and the Mill Creek WAU averages 3.9 miles of road per square mile. The road density in the vicinity of the sale units is similar.

In recent years, an emphasis has been placed on using more cross-drain culverts both on new road construction and on existing road reconstruction. This has resulted in more ditch water being diverted back to the forest floor.

*11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☐*No* ☒*Yes, approximate percent of WAU in significant ROS zone.* **<5%**
Approximate percent of sub-basin(s): **18%**

12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?

100% of the sub-basin within the significant rain-on-snow zone is rated as hydrologically mature.

13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?
☐*No* ☒*Yes, describe observations:*

There are indicators within the Willapa Headwaters WAU and Mill Creek WAU of soil movement associated with high moisture content in soil. Some inner gorge and steep headwall areas can fail during heavy rainfall events. The mass wasting described in B.1.d.2. above occurs during peak flow events and can result in accelerated sediment aggradations. Lack of LWD can contribute to stream channelization during peak flow events.

14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.

This proposal may slightly change the timing, duration, and amount of water in a peak flow event. Flow rates may increase slightly during high and low flow periods due to decreased transpiration and interception. However, Units #1 (154 acres), #3 (95 acres), and #4 (145 acres) are thinning units leaving 170, 149 and 180 trees per acre respectively. Unit #2 is a regeneration harvest of 89 acres. The location, size of units and thinning components of this sale all contribute to reducing potential increases in peak flow. RMZs averaging 200' wide on the six type 3 streams, a minimum of 100' wide on the four type 4 streams, and leave trees scattered and clumped throughout Unit #2 (at approximately 11.3 trees per acre) help maintain water quality and reduce peak flow. Forest Resource Plan green-up procedures should also limit contributions to peak flow.

15) Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?
☐*No* ☒*Yes, possible impacts:*

Each unit of the proposed sale is approximately 4 miles upstream from the Willapa River, which is primarily used for agricultural purposes. As described in B.3.a.9 and B.3.a.14 above, and B.3.a.16, below, any potential negative impact to water quality or quantity will be minimized by the control measures being included in the proposal (see B.1.h.).

16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.

The following are protection measures addressing peak flow/flooding impacts:

- **Designating RMZs averaging 200 feet wide adjacent to six type 3 streams and a minimum of 100 feet wide adjacent to four type 4 streams to maintain stream bank stability and provide LWD.**
- **Maintaining regeneration harvest unit sizes of less than 100 acres and following Forest Resource Plan green-up policies before harvesting adjacent DNR stands for Unit #2. This proposal consists of four units, three thinning and one regeneration harvest unit. Units #1, #3 and #4 are designated thinning units of 154 acres, 95 acres and 145 acres in corresponding order. Unit #2 is a regeneration harvest unit of 89 acres.**
- **Retaining leave trees to intercept precipitation and provide transpiration to moderate increases in soil moisture content; designating living leave trees to maintain soil strength from tree roots during periods of increased precipitation and soil moisture content.**

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Insignificant amounts of oil and other lubricants may be inadvertently leaked as a result of heavy equipment use. No lubricants will be disposed of on site, and any leaks will be cleaned up.

3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?
☒*No* ☐*Yes, describe:*

a) Note protection measures, if any.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water runoff from roads and intercepted subsurface flow will be collected by road ditches and ditch-outs and diverted onto the forest floor. Ditch-outs will be placed to minimize the amount of ditch water directly entering existing stream channels.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Some logging slash may enter into the thrity-six type 5 streams.

a) Note protection measures, if any.

An Equipment Limitation Zone will be utilized on the thirty-six type 5 streams. Leave tree locations will also aid in protecting streams from waste materials. See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

Cut banks will be revegetated prior to the onset of wet weather; the vegetative material will be used to collect sediment before entering flowing stream channels. Revegetation and reforestation measures will be utilized to reduce impacts to the earth. During the following planting season after harvest either tree seedlings will be planted or the stand will regenerate naturally. Though disturbed, native plants such as ferns, salal, huckleberry, and salmonberry will remain on site after logging and persist within the Douglas-fir/red alder timber type. Leave trees are scattered and clumped throughout Unit #2 with an average of 11 trees per acre. Units #1, #3 and #4 are thinning units with 170, 149 and 180 leave trees per acre respectively. Culverts and ditchouts will be installed at a location to divert ditch water onto the forest floor at the earliest point possible and will be maintained in a functional condition. A yearly maintenance schedule will be followed to allow for proper road surface runoff and drainage. Used oil will not be disposed of on site. Hazardous clean up materials will be kept on site during the operation. See B.1.h.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☐*cottonwood,* ☐*western larch,* ☐*birch,* ☐other:
☒evergreen tree: ☒*Douglas fir,* ☐*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☒*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☐other:
☒shrubs: ☒*huckleberry,* ☒*salmonberry,* ☒*salal,* ☒*other:***Sword fern**
☒grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☐skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")

Unit #1, The unit is surrounded entirely by DNR managed lands. The west and north-side of the unit is bordered by 180 acres of 60-year-old mature Douglas-fir and red alder. These stands have stratified canopies with some downed wood. The timber to the north is typed as "Good" Northern spotted owl habitat according to the December 9, 2002 Memo of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife. The east-side of the unit is bordered by Unit #2. The south is bordered by 200 acres of 45-year-old conifer stand with some patchy red alder, primarily in the draws.

Unit #2, The unit is surrounded entirely by DNR managed lands.The west-side is bordered by Unit #1. The north-side of the unit is bordered by 100 acres of 60-year-old mature Douglas-fir and red alder. This stand has a stratified canopy with some downed wood in the understory. The timber to the north is typed as "Good" and "Best Available" Northern spotted owl habitat according to the December 9, 2002 Memo of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife. This timber is also reclassified Marbled Murrelet habitat. The east-side of the unit is bordered by Unit #3. The south is bordered by 200 acres of 45-year-old conifer stand with some patchy red alder, primarily in the draws.

Unit #3, The unit is surrounded entirely by DNR managed lands. The west-side of the unit is bordered by Unit #2. The north and east-sides are bordered with 500 acres of 45-years-old stand of Douglas-fir and red alder. The south edge of the unit is bordered by Unit #4.

Unit #4, The unit is surrounded entirely by DNR managed lands. The west-side is bordered by 150 acres of 70-year-old Mature Douglas-fir. This stand has a stratified canop with some downed wood in the understory. The north-side of the unit is bordered by 200 acres of 45-years-old Douglas-fir and red alder The east-side of the unit is bordered by. The south is bordered by 82 acres of 13-year-old conifer stand with some patchy red alder. Both stands have little structural diversity.

2) Retention tree plan:

This proposal has an average of 161 trees per acre in unit 2 that have diameters (at breast height) of 12 inches or greater. It was determined that approximately 11.3 trees per acre would be designated as leave trees (7% of 161 trees per acre equals 11.3 trees per acre).

In Unit #2, the gross acreage of 89 acres works out to a total of 1003 leave trees scattered and clumped throughout the unit. Leave tree clumps total .75 acres. A single clump is composed of 30-90 trees. Douglas-fir and western redcedar with broken or deformed tops, when possible, were chosen as leave trees to increase chances of wildlife use and future snag recruitment. The clumps are located along the type 5 streams. There is little snag component within the unit, therefore, approximately 11.3 live trees per acre will remain scattered in the forest management unit following harvest activities.

Units #1, #3 and #4 are all commercial thinning units. These units will retain 170, 149 and 180 trees per acre respectively; easily maintaining the minimum required leave trees per acre.

c. List threatened or endangered *plant* species known to be on or near the site.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Though disturbed, native plants such as ferns, salal, huckleberry, and salmonberry will remain on site and will thrive with the Douglas-fir and western redcedar plantation, which will be established within one year after harvest completion in Unit #2. Some of the older trees on site will be left as wildlife trees to provide older forest characteristics. Units #1, #3 and #4 will retain much of their original characteristics and vegetation.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☐hawk, ☐heron, ☐eagle, ☒songbirds, ☐*pigeon*, ☒other: **spotted owl, marbled murrelet.**
mammals: ☒deer, ☒bear, ☒elk, ☐beaver, ☐other:
fish: ☐bass, ☒salmon, ☒trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes*, ☐*caves*, ☐*cliffs*, ☐*oak woodlands*, ☐*balds*, ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
1	44889	SPOTTED OWL: Site:877-UPPER MILL CREEK - WILLAPA	THREATENED	ENDANGERED
2	44890	SPOTTED OWL: Site:877-UPPER MILL CREEK - WILLAPA	THREATENED	ENDANGERED
3	44891	SPOTTED OWL: Site:877-UPPER MILL CREEK - WILLAPA	THREATENED	ENDANGERED
4	44892	SPOTTED OWL: Site:877-UPPER MILL CREEK - WILLAPA	THREATENED	ENDANGERED

Sale is in the Upper Mill Creek spotted owl circle and adjacent to approximately 26 acres of re-classified marbled murrelet habitat.

c. Is the site part of a migration route? If so, explain.
☒*Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:*

This proposal is located in the Pacific flyway, which is part of the Pacific Northwest forests. Many neotropical birds are closely associated with riparian areas, cliffs, snags and structurally unique trees in these forests. Riparian areas and special habitats are protected through implementation of DNR's Habitat Conservation Plan. Migratory waterfowl also use the Pacific flyway; the area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl.

d. Proposed measures to preserve or enhance wildlife, if any:

By designing this sale to comply with the department's HCP, both wildlife and wildlife habitat will be preserved and enhanced. The small unit design is conducive to ungulate feeding patterns. Scattered and clumped leave trees are favorable to raptor perching, feeding, and nesting. Well-engineered and constructed roads reduce potential water quality impacts for down stream fish populations. Grass seeding exposed soils protects water quality and provides forage. Large diameter leave trees will enhance the wildlife habitat value of the future stand.

1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

Species /Habitat: **Northern spotted owl** Protection Measures: **The proposed sale is entirely within the Upper Mill Creek owl circle, site # 877 (Status 1). Habitat within the sale is typed as "Forest Cover" and "Good" Northern spotted owl habitat according to the December 9, 2002 Memo of Understanding between Washington Department of Natural Resources and Washington Department of Fish and Wildlife. Habitat within the sale typed as "Good" will be thinned to a relative density of 50 (Units 1, 3 and4) to enhance habitat suitability. Unit #2 is typed as "Forest Cover", and therefore, a regeneration harvest of timber is planned and permitted.**

Species /Habitat: **riparian dependent species** Protection Measures: **RMZs averaging 200 feet wide will be left along six type 3 streams and at least 100 foot wide RMZs will be left along four type 4 streams**

Species /Habitat: **upland dependent species** Protection Measures: **A total of 1,003 leave trees will be left clumped and scattered throughout Unit #2. Units #1, #3 and #4 are thinning units and are retaining on average 166 trees per acre. Approximately 26 acres of re-classified marbled murrelet habitat adjacent to the proposal has been deferred from harvest.**

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Does not apply.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Minimal hazard incidental to operating heavy machinery. There is the possibility of a fire starting during the operating period, especially during fire season.

1) Describe special emergency services that might be required.

Forest fire suppression, hazardous waste cleanup.

2) Proposed measures to reduce or control environmental health hazards, if any:
Clean up materials will be kept on site during the operations. Risk of fire spreading will be reduced by having a pump truck or trailer on site during logging operations, and burning landings during the fall under cooler, wetter, conditions, subject to a written burning permit.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Log trucks will be using forest roads, county roads and SR 6. This is a normal activity for this area, and is consistent with existing traffic. Noise will be increased during daylight hours when operations are conducted.

3) Proposed measures to reduce or control noise impacts, if any:

None.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

Timber production, forest land management.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

None.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

No zoning for this area at this time.

f. What is the current comprehensive plan designation of the site?

The comprehensive plan designation is: resource lands, forest of long-term significance.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

Does not apply.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

None.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

This proposal is consistent with the designated forest land classification by Pacific County under the Growth Management Act, the Forest Resource Plan (July 1992), and the Habitat Conservation Plan (1997).

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

None.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?

Does not apply.

b. What views in the immediate vicinity would be altered or obstructed?

1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?
☐*No* ☒*Yes, viewing location:*

Units #1, #2 and #3 of this proposal are visible from State Route 6 near Lebam, WA.

2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?
☐*No* ☒*Yes, scenic corridor name:*

State Route 6.

3) How will this proposal affect any views described in 1) or 2) above?

The majority of the sale area will be thinned resulting in very little visual impact. Unit #2 is a proposed regeneration harvest leaving fewer trees than the surrounding units. Leave tree clumps and scattered individual leave trees will break up the visual impact of this proposal from State Route 6.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Aesthetic impacts will be mitigated by leaving a total of 1,003 leave trees clumped and scattered throughout the unit, retaining RMZs at least 100 feet wide along the four type 4 streams and averaging 200 feet wide along six type three streams, and by regenerating during the first planting season after harvest.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

Does not apply.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Hunting, berry picking, recreational driving, as well as other informal recreation activities.

b. Would the proposed project displace any existing recreational uses? If so, describe:

No. However, recreational uses may be altered and/or limited during operations.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None known.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

None.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Forest roads lead to Green Creek county road or Elk Creek county road, which leads to State Route 6, which links the I-5 corridor to the west coast.

1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?

No.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Does not apply.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

See A.11.

1) How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?

This proposal does not significantly affect the current transportation system or traffic circulation.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Approximately 15 vehicular trips per day will be generated during harvest operations. On completion of this proposal, some vehicle trips will be required to burn slash piles on landings and reforest the area. After that, the proposal will generate less than five trips per year, except for forest management activities. Recreational trips by vehicles may increase.

g. Proposed measures to reduce or control transportation impacts, if any:

None are planned. If garbage dumping or vandalism becomes a problem, gates and/or tank traps may be installed.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

None.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Not applicable.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: _____DAVID SUND_____FORESTER I___Date: 10-01-04
Title

Reviewed by: _____Date: _____
Title